

NEW GEOMETRIDAE FROM DUTCH NEW GUINEA AND MEFOR ISLAND.

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(Plates XXIII and XXIV.)

THE GEOMETRIDAE DESCRIBED IN THIS PAPER WERE ALL COLLECTED
FOR MR. JOICEY BY MESSRS. C., F. AND J. PRATT.

Subfamily OENOCHROMINAE.

1. *Palacodoxa* subignea Warr. ♀ (pl. XXIII, fig. 1).

55 mm.

Considerably larger than in ♂. Antenna bipectinate, but with the branches much shorter than in the ♂, those of the shorter (inner) series only about 1; as in the ♂, each branch is surmounted by a pair of shortish slender bristles. Abdomen very robust, pale-coloured.

Fore wing with apex slightly more produced than in the ♂; colours less vivid, more recalling the tone of *Parepispaxis crenulata* or *Circopetes obtusata*; antemedian line slightly angled outward on fold; cell-mark expanded into a large, irregular, vitreous spot, its anterior part small and angled outward at R^2 , its posterior larger and more rounded; distal area less variegated than in the ♂, the only conspicuous spot being between the medians. Hind wing with the tooth at R^3 less produced than in the ♂; coloration less vivid; a rather large blackish cell-dot.

Underside similarly less bright than in the ♂, the median area of the fore wing, with part of the costal, almost as white as the hind-marginal; hind wing with a rather large black cell-spot.

Mount Kunupi, Menoo Valley, Weyland Mountains, December, 1920, to January, 1921.

In spite of the great superficial dissimilarity, I do not think there need be any hesitation in referring this interesting specimen here.

2. *Callipotnia allognata* Prout incerta subsp. nov.

♂, 42 mm.

Slightly larger than *allognata allognata*, the apex of the fore wing less acutely produced, the termen of the hind wing rather more rounded; colour a warmer brown; postmedian yellow line thicker; subterminal yellow line fairly strong and regular, scarcely filled in with dark spots proximally.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, November-December, 1920.

Perhaps a distinct species.

The brown hair patches on hind wing beneath are fairly thick and almost equal in length, one on M extending from origin of M^2 to bases of R^3 and M^1 , the second on M^2 , starting at its base, the third on and in front of SM^2 , about in alignment with the other two.

3. *Naxa craspedota* sp. nov. (pl. XXIV, fig. 5).

♀, 53 mm.

Head and body white, mottled with blackish. Antenna blacker than in *guttulata* Warr., the pectination scarcely so long. Legs predominantly grey.

Fore wing subdiaphanous white, with some scattered black-grey hair-scales as in the allies; markings formed of dense black-grey irroration, that of the proximal area strongly mixed with hair-scales; proximal area to 7 mm. at hindmargin, rather more anteriorly (its distal edge being rather oblique), costal to just across SC and distal to a breadth of 6 mm. (somewhat crenulate proximally) of the dark shade; cell-spot rather larger than in *guttulata*. Hind wing with cell-spot and distal border as on fore wing, the ground colour bluntly projecting into the border about R^2 .

Underside similar.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921.

A most interesting discovery, the previous limit of the eastward range of the genus being Borneo. Quite near *guttulata*, differing in the darkened base and dark borders. The left hind wing shows a venational sport, R^2 being forked distally (for nearly half its length).

Subfamily HEMITHEINAE.

4. *Aeolochroma venia* sp. nov. (pl. XXIV, fig. 1).

♂, 41—42 mm.

Closely related to *prasina* Warr., structure and general coloration and markings nearly the same. Smaller, antennal ciliation perhaps slightly shorter. Abdomen beneath more ochreous, without the dark anterior shading of ♂ *prasina*.

Fore wing (as also the body) with the green shade more vivid, more yellowish; basal patch weak, posteriorly almost obsolete; median area broader posteriorly than in *prasina*, anteriorly green (only costally dark-spotted), posteriorly with the glaucous-whitish, dark-dusted shading much more extended than in *prasina*; the rufous-brown shade proximally to the subterminal rather strongly and uniformly developed from R^2 to hindmargin, gently incurved. Hind wing slightly rounder than in *prasina*, less produced tornally; as far as the postmedian line predominantly flesh colour, with some glaucous-whitish admixture, distally a little more variegated than in *prasina*.

Both wings beneath as far as the postmedian line without the dark suffusions of *prasina*, the hindmargin predominantly whitish, the rest of a rather uniform orange, except for small pale patch distally to the cell-spot of the fore wing; subterminal blackish shade of fore wing much less extended distally than in *prasina*; postmedian line of hind wing straight or almost straight.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921.

5. *Aeolochroma chioneschatia* sp. nov. (pl. XXIII, fig. 9).

♂, 50—54 mm., ♀, 64 mm.

Face deep purple below, brown in middle, pale above. Palpus in ♂ $1\frac{1}{2}$, in ♀ almost 2; brown marked with deep purple. Antenna in ♂ pectinate to less than $\frac{2}{3}$, the branches rather short. Vertex, thorax and base of abdomen mottled purple and green, with some pale admixture, tapering to a point dorsally, leaving the end of the abdomen and most of the pleura and venter orange. Legs predominantly purple.

Fore wing in the ♂ green, somewhat olivaceous, in parts clouded with purple, in one or two examples predominantly purple; in the only known ♀ purple; base of costa mixed with whitish or very pale violet; a white apical patch, 5 or 6 mm. in extent at costa and reaching or

crossing R^2 at termen; coarse black irroration, in part confluent, leaving free the reverse edges of the antemedian and postmedian lines and some irregular subterminal patches; lines black, thickened at costa; antemedian excurved in and again behind cell; median strong costally, then merged in a narrow discal ocellus; postmedian forming short thick teeth outward, projecting distally to R^3 , strongly retracted behind M^1 ; some black proximal edging to the apical patch (especially in the ♀); a black subterminal shade (variable in development) posteriorly; terminal line subcrenulate, on the white patch olivaceous with black dots, posteriorly black; fringe anteriorly whitish with olivaceous spots, posteriorly green with black spots. Hind wing in ♂ heavily mixed with black as far as the dentate postmedian line, in ♀ concolorous with fore wing; abdominal fringe partly orange; an outwardly dentate, more or less interrupted, subterminal black shade; terminal line and fringe-spots black.

Underside deep blue-purple, in the ♀ becoming black distally; fore wing with cream-white apical patch, a large dark cell-spot, a pale spot immediately beyond this, and a small subcostal one just beyond the postmedian line or band, which is broad but not distinct anteriorly, narrow and evanescent posteriorly; hind wing with an extended cream-white costal patch and some slighter and more variable ones (in the ♀ prominent) at termen behind SC and near hind margin behind the position of the postmedian line; a more or less extended orange spot at hindmargin, extending on to the fringe.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, twenty ♂♂, one ♀.

A very fine species, akin to *purpurissa* Warr.

6. *Hypodoxa pallida* Joicey and Talb.

The hitherto unknown ♀ is similar to the ♂ but larger (ca. 48 mm.), the median area of the fore wing mixed with glaucous-whitish, the area between postmedian and subterminal lines on the hind half of the fore wing and nearly throughout hind wing mixed with violaceous-grey. Hind wing beneath with dark discal dash. Terminal joint of palpus longer than second joint.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, November-December, 1920, ♀, allotype; Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, three ♀♀, paratypes.

7. *Tanaorhinus unipuncta* Warr. *meforensis* subsp. nov.

♂.

Smaller than the name-type, fore wing with the median area concolorous or nearly so. Hind wing with the postmedian pale line obsolescent anteriorly, apparently thicker and more dentate than in the other races, rather thick and ill-defined posteriorly.

Hind wing beneath with the postmedian line weak or almost wanting.

Mefor, August 15 to September 10, 1920, three ♂♂.

To some extent intermediate between *rafflesi* Moore and *unipuncta*, suggesting that the latter may prove a race of the former.

8. *Dioscore ancyla* sp. nov. (pl. XXIV, fig. 9).

♂, 39—43 mm.

Palpus with the third joint quite short, mostly concealed. Antennal pectination short, the longest branches scarcely 3, more than one-half the shaft non-pectinate. Frenulum with the club small. Head and body green, the abdomen posteriorly mixed with white, beneath mixed with white. Hind tibia with hair-pencil moderate, mostly white.

Fore wing with R¹ stalked; celandine-green (pl. xlvii, *b*, in Ridgway), costal edge of fore wing inclining to pea-green, terminal area in distal half pale Nile-blue; a deeper green cell-dot; a greatly incurved white line from apex to hindmargin at about 3 mm. from tornus, proximally edged with yellowish-green; fringe yellowish-green. Hind wing rather elongate tornally, distal margin faintly waved, little convex, least so between SC² and M¹; M¹ about connate; concolorous with fore wing, at costal margin paler mixed; cell-dot minute; postmedian line straight, nearer to termen at abdominal margin than at costa.

Fore wing beneath with the pea-green shade extended, embracing most of the wing proximal to the postmedian line, only behind M and M² remaining pale, at hindmargin almost white; cell-dot weak; postmedian line weak, anteriorly almost obsolete, but developing a white apical spot. Hind wing with the line moderately distinct, especially its green element, which curves slightly away from tornus at its posterior end.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, three ♂♂.

9. *Anisozyga extravagans* sp. nov. (pl. XXIV, fig. 2).

♂, 37—40 mm.

Face green, narrowly pale below. Palpus over $1\frac{1}{2}$, terminal joint moderately elongate; light-brown, paler beneath, mixed with some green scales above. Vertex mixed with brown and (more sparingly) with green. Antennal pectinations short (about 1). Thorax and abdomen light buff, the patagia, tegulae, and first segments of abdomen dorsally green, the abdomen further with some dark-brown dorsal irroration, some green laterally and just before anal tuft; pencil beneath thorax green. Legs pale, the fore leg heavily spotted with blackish.

Fore wing with termen only weakly crenulate; grass-green, about as in *beatrix* Prout; costal margin pale ochraceous-buff, tinged (especially at extreme edge) with rufous and sprinkled with blackish scales; markings light-buff, antemedian line wavy, obsolescent except in cell; a small triangular patch at end of cell; an apical patch 6 mm. long, whiter at its proximal and distal edges, slightly dotted or spotted with green and blackish in middle, its proximal edge somewhat curved and with slight indentations on veins, its posterior edge straight, midway between R^1 and R^2 ; a smaller patch between hindmargin and fold, about 5 mm. long, terminating at tornus, edged anteriorly by some darker and redder scales; small pale dots at vein-ends; fringe mixed with green. Hind wing with costal margin and an extremely large subrotundate apical blotch pale, the latter occupying most of the wing (its diameter about 9 mm.), edged proximally and posteriorly with darker and redder scales, sparsely sprinkled nearly throughout with dark scales; termen with some black interneural dots.

Underside very pale watery green; fore wing with the subternal patch partly blackish, the rest nearly as above; hind wing with the large blotch blackish, except at termen.

♀ rather larger, palpus just over 2, the terminal joint being much longer than in the ♂. Fore wing with the pale blotches larger, the apical reaching to between R^3 and M^1 ; in addition, a basal patch 3.5 mm. in length. Hind wing with the large blotch as in the ♂; in addition, a small ternal blotch. Fore wing beneath with the dark ternal patch enlarged, narrowly confluent with an additional (subterminal) dark patch between the radials.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, five ♂♂, one ♀.

Between *veniplaga* Warr. and *beatrix* Prout.

10. *Anisozyga polyglena* sp. nov. (pl. XXIV, fig. 6). σ , 36 mm.

Face white, the upper half soiled with red-brown. Vertex white with some brown and black scales. Palpus brown, beneath white, on outer side (except third joint) with a black stripe. Antennal pectination short (little over 1). Thorax and abdomen white, the tegulae, patagia and anterior segments of abdomen spotted with green, the posterior segments with black. Legs mostly white. Pectoral hair-pencil white.

Fore wing with termen scarcely waved, venation normal, R^1 about connate; rainette-green (Ridgway, pl. xxxi, *i*), with fine white irroration and strigulation; cell-mark white; costa to 3 or 4 mm. broadly whitish with heavy admixture of black, then more narrowly whitish, less dark-mixed, distally pale-brownish with a little dark irroration; lines white; antemedian at about 5 mm., rather irregular, thickened at both ends, proximally accompanied at hindmargin by a brown-black patch; postmedian at nearly two-thirds, mostly slender and rather weak, but irregular, dentate outward on the medians, thickened into a large white spot at hindmargin; subterminal nearly 2 mm. from termen, connected therewith along most of the veins; some large conspicuous purple-black (through the lens brown-black, irregularly irrorated with violet-whitish) spots in distal area, namely one at costa (followed by a small one nearer the apex) and one at hindmargin proximal to the subterminal (the latter reaching the postmedian) and two distal to it between R^3 and M^2 ; fringe pale, tinged with green proximally, with brown distally.

Hind wing with termen moderately dentate; venation normal; cell-mark small and weak, dark-green; antemedian only expressed by the inner marginal spot; postmedian fairly strong, central; deeply indented between R^2 and R^3 ; subterminal partly obsolete; no black spots proximally or at abdominal margin, the distal ones between R^3 and M^2 as on fore wing, the apical ones more numerous, more irregular, forming a constellation of four large and some smaller (partly confluent) on a large white apical patch.

Underside white-green, with the white markings indistinct, the black ones mostly strong, the apical on hind wing enlarged into a patch, the median ones on the same wing also enlarged, also confluent.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, two σ σ .

11. *Prasinocyma serratilinea* Warr. *ultima* subsp. nov.

♂, 35—39 mm.

On an average larger than the name-type, rather darker, with more definite shadings in the median area against the lines; cell-dots black; antemedian line of fore wing more shallowly lunulate-dentate, postmedian with still deeper indentation behind M².

Mount Kunupi, November-December, 1920 (type and five paratypes); December, 1920 to January, 1921 (three paratypes).

Possibly a separate species.

12. *Prasinocyma minutipuncta* Warr. *allocraspeda* subsp. nov.

♂.

Differs from the name-typical form in having the fringes golden-yellow, only slightly mixed with green at the extreme bases; terminal dots rather strong.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, type.

Also occurs at Fak-Fak and in the Ninay Valley, but I have previously seen only indifferent specimens. In the Snow Mountains the form is somewhat intermediate, the fringes being tipped with pale yellow.

13. *Prasinocyma rudipunctata* sp. nov. (pl. XXIV, fig. 10).

♂, 41—45 mm.

Face green. Palpus almost 1½, reddish-ochreous, becoming paler (whitish) beneath. Vertex and antennal shaft white; pectinations rather long and coarse, showing a tendency to curve, as in *Thalassodes*. Occiput green. Thorax and abdomen green above, white beneath. Legs white; fore femur red-brown above and on inner side, tibia and tarsus of a nondescript shade (tinged with brown and with olive); hind tibial hair-pencil rather strong.

Fore wing with SC¹ free, R¹ not or scarcely stalked, M¹ connate or just separate; light blue-green, about as in *latistriga* or a little brighter (slightly variable); costal edge very narrowly buff, then narrowly tinged with reddish; cell-dot black, fairly large, inclining to be obliquely elongate; lines white; antemedian faint at costa (about 4 mm. from base), gently excurved and slightly oblique in its general course, but with a very feeble concavity about fold to SM²; post median obsolete at

costa, at first 6 or 7 mm. from termen, mostly slightly nearer thereto, somewhat undulate, with the most noticeable inward curves at folds; termen with small but sharp black dots; fringe light ochreous-buff. Hind wing bluntly bent at R^3 ; cell-dot large, rather irregular, more or less elongate; antemedian weak, angled near abdominal margin; postmedian rather protrusive at R^3 to M^1 , thence rather deeply dentate to abdominal margin.

Underside whitish-green, deeper costally on fore wing, costal edge ochreous-buff, then greyish; terminal dots as above; fringes rather paler.

Mt. Kunupi, Menoo Valley, Weyland Mountains, November-December, 1920, type and five other ♂♂; December, 1920, to January, 1921, one ♂, two ♀♀.

14. *Prasinocyma philocala* sp. nov. (pl. XXIV, fig. 3).

♂, 31 mm.

Head green, with a broad white fillet between the antennae. Palpus rather short, beneath white. Antennal shaft white, pectination rather long. Body green above, white beneath; the abdomen with a white dorsal line. Legs white, the fore leg green above; hind tibia with strong white hair-pencil.

Fore wing with apex moderately sharp, termen almost straight, not very strongly oblique; SC^1 anastomosing very shortly with C; of nearly the same delicate blue-green as *coerulea* Warr., becoming a rather more decided green about C and SC; costa narrowly white at extreme edge, then narrowly tinged with light brown; lines represented by white vein-spots, the antemedian forming a large one on base of M^2 and a second almost equally large on SM^2 , the postmedian almost parallel with termen (at about 4 mm.), mostly small, the one on R^3 larger and (almost inappreciably) more proximal; cell-dot very feebly indicated in darker green; a fine, not conspicuous brown terminal line; fringe whitish. Hind wing with termen gently curved, not strongly convex, not angled at R^3 , tornus consequently appearing acute; marked (except costally) as fore wing, but with the postmedian series of dots arcuate.

Underside whitish-green, the fore wing brighter green anteriorly, its costal margin nearly as above; lines (including the terminal) obsolete; fringes white.

Mt. Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, December, 1920, to January, 1921.

The first-known species to combine the colour and maculation of *coerulea*, *glauca*, etc., with the dorsal line of *punctulata leucogramma* or the *gigas* group.

15. *Prasinocyma tryphera* sp. nov. (pl. XXIV, fig. 7).

♂, 29—30 mm.

Face green. Palpus nearly $1\frac{1}{2}$; green, beneath white. Vertex and antennal shaft white; pectination 4 or 5. Occiput green. Thorax and abdomen green above, white beneath. Legs mostly white; fore coxa green; hind tibia with moderate white hair-pencil.

Fore wing with costa arched distally, apex moderate, termen straight; SC¹ free (type), or anastomosing slightly with C, R¹ connate or slightly stalked, M¹ not stalked; delicate blue-green as in *delicata* Warr., or *punctulata* Warr.; costal edge buff, mixed with grey; cell-dot minute, black; lines whiter than ground colour, but almost obsolete, formed and placed nearly as in *punctulata*; terminal black dots very minute and inconspicuous, easily overlooked; fringe white, tinged with cream-colour. Hind wing moderately ample, very feebly bent at R³; R¹ and M¹ both stalked; first line wanting (?), the rest as on fore wing.

Both wings beneath green, the fore wing in posterior half and a great part of the hind wing proximally becoming whiter.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, November-December, 1920, and (type) December, 1920 to January, 1921, two ♂♂.

16. *Prasinocyma annexa* sp. nov. (pl. XXIV, fig. 11).

♂ ♀, 38—40 mm.

Face green. Palpus in ♂ $1\frac{3}{4}$, in ♀ $2\frac{1}{2}$, third joint elongate in both sexes, especially in the ♀; second joint green above, white beneath; third joint red-brown. Vertex white, occiput green. Antennal shaft white, branches green, at least at extremities. Thorax and abdomen green above, white beneath. The fore leg tinged with red-brown above, especially on femur; hind tibia of ♂ with rather strong hair-pencil.

Wings with the shape, colour and markings almost as in *vestigiata* Warr., the dots on the veins stronger, especially on SM² of the fore wing, where the enlargement of the postmedian even begins to recall that of *simplex*, *dioscorodes*, *marina*, and *glauca*.

Mount Kunupi, Menoo Valley, Weyland Mountains, November-

December, 1920 (five ♂♂), December, 1920 to January, 1921 (type and two other ♂♂, allotype ♀).

Differs from *vestigiata*, apart from the lines, in the rather longer palpus, absence of white dorsal dots of abdomen, larger size and perhaps slightly brighter colouring; from *sororcula* Warr., and *fraterna* Warr., in the palpus, the dotted lines, the fringes, etc. Occurs also with *vestigiata* at Mount Goliath: one ♂ and two ♀♀ had been put aside at the Tring Museum for investigation.

17. *Prasinocyma pratti* sp. nov. (pl. XXIV, fig. 4).

♂, 38—39 mm.

Face slightly loose-scaled, green. Palpus $1\frac{3}{4}$, third joint nearly half second joint; ochreous, mixed (especially proximally) with green. Antenna ochreous. Vertex and occiput green. Thorax above green, beneath white, in front of fore coxa green. Fore leg above largely black-grey, pale at extremities of joints; hind leg whitish-ochreous, the tibia only moderately dilated, the hair-pencil rather slender. Abdomen above green, beneath white; each segment with a triangular ochreous dorsal spot, its apex directed forward, its anterior part finely dark-edged, its posterior becoming whiter.

Fore wing with apex acute, termen subcrenulate, SC¹ free, M¹ almost connate; green; costal edge deep ochreous, dotted with blackish; cell-dot deep-green; lines pale-ochreous; antemedian 4 mm. from base, deeply lunulate outward in cell, in submedian area, and behind SM², thickest at ends of the lunules; postmedian zigzag, from SC⁵ about 3 mm. from termen to hindmargin about 4 mm. from tornus, obsolete between a spot on SC⁵ and one on R¹, thence with the outward teeth on the veins, a deep inward curve between M² and SM²; fringe ochreous, deeper proximally than distally and with black-brown dots at ends of veins and of submedian fold. Hind wing with termen crenulate, slightly angled at R³; SC² very shortly stalked, M¹ about connate: nearly as for fore wing except costally, but with antemedial line wanting.

Underside whitish green, unmarked; costa of fore wing and fringes as above.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, December, 1920 to January, 1921, two ♂♂.

A rather anomalous species, with somewhat the facies of a *Dioscore*.

18. *Prasinocyma inturbida* sp. nov. (pl. XXIV, fig. 8).

♀, 26 mm.

Face green, shading off to white below. Palpus short ($1\frac{1}{4}$), rather slender, terminal joint short but distinct; green, beneath whitish. Crown and antenna green. Thorax and abdomen green, beneath white. Legs white, the fore leg mostly green on upper and inner side.

Fore wing with apex pointed, termen gently subcrenulate; SC^1 anastomosing shortly with C, and at a point with SC^2 , R^1 shortly stalked, M^1 connate; subtranslucent whitish green, closely irrorated with deeper blue-green scales and with a few lustrous white ones; costal fringe proximally unusually long, green; costal edge beyond this very narrowly buff, mottled with brown; cell-dot black; lines diffuse, not strong, merely formed of somewhat denser irroration, weakly pale-edged on their reverse sides; antemedian from two-sevenths costa, rather strongly excurved at both folds, thus with proximal angles on the veins; postmedian at about 3 mm. from termen, receding anteriorly to R^1 , lunulate-dentate throughout; fringe pale-green. Hind wing with abdominal margin only moderately elongate, termen crenulate, with a stronger tooth at R^3 ; cell-dot and postmedian line nearly as on fore wing.

Underside paler, the markings faintly showing through.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, November-December, 1920.

Like a few other *Prasinocyma* (e.g., *tripuncta* Prout, to which it is probably related) this species is almost a "*Chlorocoma*" by the palpal character.

Subfamily GEOMETRINAE.

19. *Milionia megadema* Roths. and Jord. *ptochica* subsp. nov. (pl. XXIII, fig. 12).

♂ ♀.

Band of fore wing much narrower than in *megadema megadema* measuring at its widest part only 5 or 6 mm., and usually tapering slightly anteriorly. Usually also (three ♂♂, two ♀♀) the band is orange instead of red. The two ♀♀ in which it remains red may be named *ab. euchroma* ab. nov.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet,

November-December, 1919 (three ♂♂, three ♀♀), and December, 1919, to January, 1920 (one ♀ of ab. *euchroma*).

M. aroensis Roths., which is evidently also closely related, shows the same dichromatism (as do several other species likewise); it differs, however, apart from the narrow band—which may vary if the (to me unknown) specimen described by Thierry-Mieg as *scintillans* is really a mere aberration, as I rather suspect—in the extended blue of the upper surface.

20. *Milionia eutyches* sp. nov. (pl. XXIII, fig. 2).

♂, 55 mm.

Eye hairy. Antennal ciliation 1. Hind tibia dilated, with strong hair-pencil. Head and body black, mixed with blue, which is brightest and most greenish on face, tegulae and patagia, but varies, as in the allies, according to the incidence of the light.

Fore wing moderately elongate, scarcely so much so as in *arfaki* Beth.-Bak., and *aglaia* Roths. and Jord.; black, shot in distal half with deep-blue; a bright-blue, somewhat iridescent subbasal patch between M and hindmargin, distally encroached upon by red scales on SM² and hindmargin; a more restricted hindmarginal red patch beyond it, scarcely crossing SM²; an orange band much as in some forms of the variable *arfaki*, and which may in a series prove equally variable; this does not quite reach costa, is 5 mm. wide anteriorly, 2.5 mm. from fold to hindmargin, its distal edge very gently curved, not quite reaching end of cell, its proximal edge almost straight and very oblique from SC to fold, its hinder end strongly overlaid with red. Hind wing black, shot with deep blue; band of fore wing continued but narrowly, from costa to R¹ orange, anteriorly with some black irroration, from R¹ to its end at SM² predominantly red, behind R¹ excurved, behind M² narrowing, at its end scarcely 1 mm.

Underside with the band of both wings broader, orange, that of fore wing straighter, distally reaching DC, that of hind wing with a rather broad and deep proximal indentation between the radials.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, December, 1920, to January, 1921.

Differs from the closely allied *arfaki* in being larger, the band of fore wing more curved, that of hind wing more bent, both broadened beneath, the abdomen dorsally with the blue reflections darker and less

strong. The same points, excepting size, distinguish it from *aglaia* Roths. and Jord. (*Nov. Zool.*, xii, p. 468).

A specimen which is almost certainly the ♀ is rather larger (59 mm.), the blue and red proximal patches of fore wing merged into a large and uniform red patch, the band almost uniform orange-red, that of hind wing broader (and broadest in *posterior* half), less bent.

21. *Milionia diva* Roths. *constans* subsp. nov.

♂.

Similar to form *b* of the name-typical race—fore wing with a large red triangular area. This area is, however, in general broader, its extension from SM^2 to hindmargin 4—5 mm. in width; the black patch at base and hindmargin is, after the basal 3 mm., bordered anteriorly by SM^2 , whereas in *diva diva* it crosses that vein at its distal end or very near thereto.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, December, 1920, to January, 1921, type and six paratypes; also one ♂ from Menoo River, 3,500 to 5,000 feet, November-December, 1920.

One of the Mount Kunupi series is an ab., with the red reduced, and might be mistaken for a British New Guinea specimen, but this clearly does not affect the validity of the race.

22. *Milionia carycina* sp. nov. (pl. XXIII, fig. 10).

♂ ♀, 42—47 mm.

Eye hairy. Antennal ciliation of ♂ very short. Head and body black-brown, more or less mixed with metallic blue, especially on face, patagia and tegulae. Hind tibia of ♂ dilated, with hair-pencil.

Fore wing brighter red than in *rubra* Joicey and Talb. (*Ann. Mag. Nat. Hist.* [8], xv, p. 296, t. 12, fig. 2), proximally almost blood-red, distally more tinged with vermilion, sometimes (but perhaps not in perfectly fresh specimens) mixed with orange; base narrowly black; hind marginal area generally black proximally, to a variable extent, but oftenest quite narrowly, almost always tapering off gradually, whereas in the very similar *diva constans* it nearly always falls away steeply from SM^2 to hindmargin; a black apical border, at costal margin about 9—10 mm. broad, its proximal edge very gently curved and running obliquely outward so as to reach hindmargin about

submedian fold or at tornus, in the former case with a thread-like marginal continuation to tornus; fringe black, shot with blue. Hind wing black, basally and posteriorly with blue reflections, which are less vivid but more diffused than those of *diva* Roths.; fringe less black, with slight blue reflections.

Underside nearly the same; hindmargin of fore wing paler—more greyish or brownish proximally, then more yellow; hind wing with a short metallic-blue costal streak at base.

Weyland Mountains: 5,000 feet, June, 1920, one ♀; Mount Kunupi, 6,000 feet, November, 1920, one ♀; November-December, 1920, two ♂♂, one ♀; December, 1920 to January, 1921, three ♂♂, three ♀♀, including the holotype ♂, and allotype ♀; Menoo River, 3,500-5,000 feet, December, 1920 to January, 1921, five ♂♂.

Distinguished at once from *diva* by the much shorter antennal ciliation, as well as by the less broad black apical region; from *rubra* not only by the tone but also by the form of the black apical region, which does not, as in that species, run basewards along the costa. A short series from the Wandammen Mountains also collected by the Pratts, has hitherto been mixed in Mr. Joicey's series of *rubra*, which is at present only known from the Angi Lakes.

23. *Milionia semirutila* sp. nov. (pl. XXIII, fig. 6).

♀, 38 mm.

Eye not hairy. Head and body black, the abdomen more greyish, especially beneath and posteriorly, towards the extremity mixed with a few dull orange scales.

Fore wing not greatly elongate, costal margin gently curved, termen scarcely oblique anteriorly; cell not quite one-half; black with a broad oblique orange-red band, occupying about one-third of costa (scarcely proximal to the centre), of uniform width throughout, reaching abdominal margin but separated from termen (from M^2 to tornus) by a black thread; fringe black. Hind wing black, with a slightly less broad orange-red submarginal band, separated from termen by a very narrow black border, which is broadest at about SC^5 to R^3 but tapers to a point at tornus; fringe black.

Underside the same.

Weyland Mountains, Dewaro Village, 3,500 feet, June, 1920.

Perhaps in some measure transitional to the genus (or section?) *Automolodes* Warr., but with the hind wing quite differently shaped.

24. *Craspedosis iniquisecta* sp. nov. (pl. XXIII, fig. 3).

♀, 48 mm.

Head black, the face and vertex tinged with blue. A very small tuft at lower extremity of face. Antennal ciliation approaching 1. Thorax blue-black, above mixed with white; tips of patagia white. Abdomen black, with light-orange belts, which ventrally suffuse almost the entire surface. Legs black-grey, the tarsi paler, tinged with orange-brown.

Fore wing with fovea strong, white; costal margin black; a black distal border of about 4 mm. width, shading into blue-grey on meeting the ground-colour; an extended blue-black area (irregularly irrorated with white) from base of inner margin to beyond extremity of cell, connected with distal border by streaks along SC^5 (confluent with the black costal border), R^3 and M^1 ; blue-grey teeth from the black distal border projecting proximad on R^1 , M^2 and SM^2 . Hind wing white; costal margin blue-grey, distal border black; a blue-grey extension from the costal border, running proximal to the distal border as far as radial fold and resumed between M^2 and tornus; a large sugar-loaf-shaped intermediate projection (from radial fold to median interspace), just entering posterior corner of cell.

Underside similar, the blue-black parts darker.

Weyland Mountains, Dewaro Village, 3,500 feet, June, 1920 (C., F. and J. Pratt) type; Wai Sai River, 1,000 feet, June, 1920, paratype.

♂. Quite similar, such minute deviations as can be observed in the markings being obviously individual, not sexual. Wings very slightly narrower, antennal ciliation fully 1.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, allotype, received subsequently to the preparation of the above description.

25. *Craspedosis flavidistata* sp. nov. (pl. XXIII, fig. 4).

♀, 37—41 mm.

Close to *flavimedia* Warr., of which it might even prove a subspecies.

Fore wing with an appreciable admixture of reddish-brown in the black ground-colour, beginning to approach *scordylodes* Joicey and Talb.; the yellow band, which varies slightly in width (from 3.5—4.5 mm., on an average narrower than in *flavimedia*), more distally placed—about three times as wide outside the cell as within it (in

472 *Geometridae* from Dutch New Guinea and Mefor Island

flavimedia more than half the width is within the cell), and running to distal instead of to hindmargin, its posterior boundary being at submedian fold.

Mount Kunupi, Menoo Valley, December, 1920, to January, 1921, type ♂, allotype and paratype ♀; November, 1920, paratype ♂; Menoo River, 3,500-5,000 feet, November-December, 1920, one ♂; December, 1920 to January, 1921, two ♂♂; also one ♂ from the same district without exact data.

That this cannot be a less rufescent form, with differently shaped band, of *scordylodes* Joicey and Talb. (of which the type remains unique) is shown by the fact that the latter has the terminal joint of the palpus longer.

26. *Craspedosis effusa* sp. nov. (pl. XXIII, fig. 8).

♀, 42 mm.

Face grey, narrowly whiter above. Vertex grey, paler between the antennae. Thorax and abdomen above dark-grey, beneath (with legs) rather paler; in places shot with blue; tip of abdomen bright ochreous.

Fore wing moderately broad, termen rather strongly oblique; black-grey with a slaty tinge, in some lights with fairly strong blue reflections; a broad (ca. 6 mm.) white band from SC to hindmargin, its proximal edge about 4 mm. from base anteriorly, about 5 posteriorly, its distal edge fairly straight except behind SM² (where it curves inward) traversing DC²⁻³; fringe paler grey. Hind wing with the blue gloss rather stronger; the white band of fore wing continued at costal margin only about to R' but becoming progressively more dusted with the ground-colour; fringe white.

Underside similar.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January to February, 1921.

The white band of the fore wing, even more markedly than in *semilugens* Warr., *swinhoei* Roths., etc., shades into the ground-colour proximally and distally through a narrow area of irroration; in this respect a contrast to the larger, blacker *affinis* Roths., from which it further differs in the unicolorous dorsum of abdomen and the white costal band and fringe of hind wing.

27. *Craspedosis uniplaga angustiplaga* subsp. nov.

♂, 40 mm.; ♀, 46 mm.

Smaller than *uniplaga uniplaga* Warr. (1896, Fergusson Is.).

Fore wing with the white band narrower (especially in the middle), straighter, its distal edge less convex, its proximal not sinuous posteriorly. Hind wing with the white patch more truncate proximally, the black basal area in consequence relatively a little larger.

Mefor, August 15 to September 10, 1920. Type and allotype in coll. Joicey. A pair in coll. Tring Museum confirm the validity of the race; the ♀, though more nearly equalling that of *uniplaga uniplaga* in size, shows all the other distinctions of the ♂.

28. *Craspedosis galathea galathea* Warr. *weylandensis* subsp. nov.

♂, 41 mm.; ♀, 47--52 mm.

Differs from *galathea galathea* Warr. (*Nov. Zool.*, v, 33, Kapaur) in having the white markings reduced, the subterminal series entirely wanting. Fore wing with the white basal area between M and hind margin more or less broadly divided by black along SM². Typically also the white spot in cell almost obsolete, that at base of medians entirely so, but the ♀ from Mount Kunupi approaches Warren's form in these latter particulars.

Wangaar River, 15 miles from coast, ca. 600 feet, January, 1921, type ♂; Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, allotype ♀ (52 mm. expanse); Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, November-December, 1920, ♀ ab.

29. *Bordeta bursadoides* Warr. *superior* Prout ab. *deannulata* ab. nov.

♀, 41 mm.

Tegulae not appreciably pale. The pale colour on pectus and fore coxa greatly restricted.

Abdomen dorsally black, without even the single orange belt of ab. *uniannulata* Warr. (*Nov. Zool.*, xvi, p. 127).

Fore wing with the oblique orange band moderate (no doubt more or less variable, as in all the forms). Hind wing with the black borders ample, continuing (though in part very narrowly) along abdominal margin.

Nomnagihé, 25 miles south of Wangaar, January-February, 1921, type; Mount Kunupi, 6,000 feet, December, 1920, to January, 1921, paratype.

May possibly prove a local or seasonal form, but as the form *superior* Prout prevailed in the Weyland Mountains, it seems more probably a mere chance that the two taken on the second expedition differ so markedly therefrom.

30. *Eucharidema apora* Prout *plesiozona* subsp. nov. (pl. XXIII, fig. 11).

♂, 48 mm.

Abdomen with the anal tuft not lighter than the rest.

Fore wing with the white band differently formed, not so oblique proximally as in *apora apora*, being about 10 mm. from base at margins, its distal edge straightish to M^2 , at which vein it has widened to 4.5 mm., then suddenly incurved so as to narrow it to scarcely 1.5 mm.; traces of a bar from the angle on SM^2 to tornus, thus reversing the proportions common in the female of *apora apora*. Hind wing with the band reddish-orange, farther removed from termen than in *apora apora*, quite short, running from the radial fold to the submedian one, tapering from nearly 2 mm. to a point.

Nomnagihé, 25 miles south of Wangaar, 2,000 feet, January-February, 1921, one ♂.

31. *Paraleis tmetoloba* sp. nov. (pl. XXIII, fig. 5).

♀, 37—41 mm.

Nearly related to *albistigma* Joicey and Talb. (*Ann. Mag. Nat. Hist.* [8] xx, 75, pl. 3, fig. 2) but smaller.

Fore wing with the brown ground-colour less tinged with rufous (more as in *costimacula* Joicey and Talb.), the black cloudings rather heavy; the white median fascia much broader, proximally reaching the cell, in its anterior half (and sometimes almost throughout) without dark irroration; a conspicuous lobe of the ground colour projects from its proximal side, generally almost reaching its distal side, bisected with white on M^2 ; antemedian line less oblique posteriorly; costal mark in white area small, the line which originates from it only indicated by a few dots; terminal white mark smaller, more crescentic, scarcely connected with the subterminal. Hind wing more blackish-grey.

Fore wing beneath with the orange band broad and (except for the

small grey midcostal mark) clear, widening slightly posteriorly, its anterior extremity (between R^3 and M^1) becoming whitish at termen.

Mount Kunupi, Menoo Valley, Weyland Mountains, 6,000 feet, November-December, 1920, type and another; December, 1920 to January, 1921, two ♀ ♀.

It is just possible that this is a strikingly different form of the unique *costimacula* Joicey and Talb. (l. c., 76, pl. iv, fig. 17), with which it agrees in size, ground-colour and apparently shape of markings; but the hind wing as well as being blacker, has the termen rather more regular.

32. *Ctimene tenebricosa* sp. nov. (pl. XXIII, fig. 7).

♂ ♀, 35—38 mm.

Head and body brown-black, as in *velata* Warr. (*Nov. Zool.*, xiii, p. 139), slightly marked on side of prothorax and base of fore coxa with ochreous.

Fore wing uniform brown-black. Hind wing bright yellow-ochre with black borders all round, the costal and terminal of an average breadth of about 2 mm., the abdominal narrower.

Underside similar, both wings slightly marked with ochreous at base.

Mount Kunupi, Menoo Valley, 6,000 feet, November-December, 1920, type ♂, allotype ♀, three paratypes ♂; also eight ♂ ♂ from the Menoo River, 3,500-5,000 feet, November-December, 1920.

Variation slight, chiefly in the width of the borders of the hind wing. One example shows a slight orange dash on the cell-fold of the fore wing, about midway between base and termen. Another shows a small black dot on DC^2 of the hind wing.

33. *Sabaria perfulvata* sp. nov. (pl. XXIV, fig. 12).

♂, 28 mm.

Closely similar to *semirufa* Pagenst. (*Jahrb. Nass. Ver. Nat.*, xxxix, p. 153) of which it is probably the Mefor representative, possibly subspecies.

Fore wing and abdominal region of hind wing scarcely differentiated in colour from the rest of the hind wing, only a trifle less golden fulvous, more tinged (especially at costa of fore wing) with reddish; lines more orange, the postmedian on both wings rather more proximally placed than in *semifulva*; termen of hind wing with appreciable though minute excision between the radials.

♀, 32 mm.

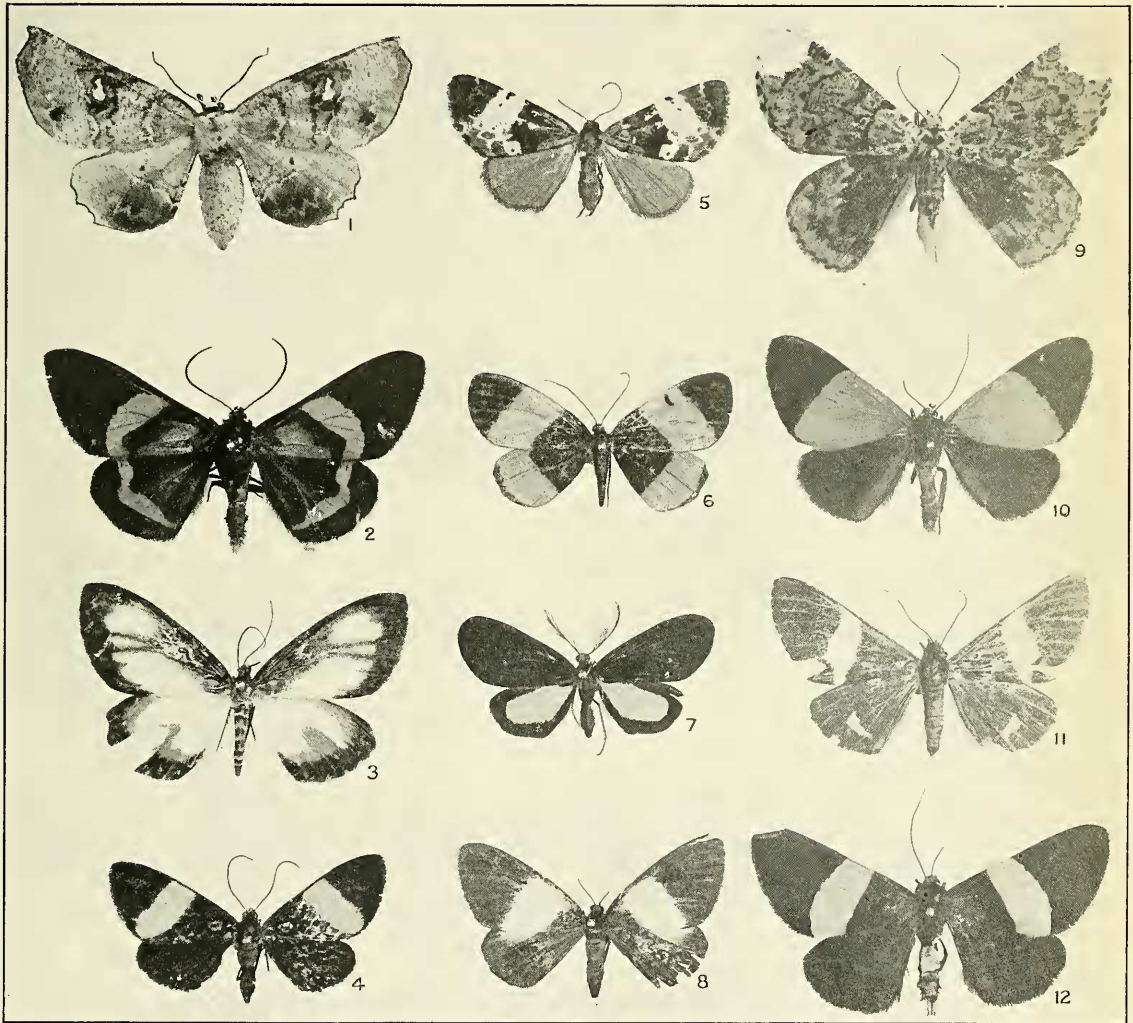
Larger than the ♂, of a rather deeper, more reddish colour, spots blackish, shading at abdominal margin of hind wing (especially towards tornus) more strongly differentiated.

Mefor Island, August 15 to September 10, 1920, holotype ♂, two paratypes ♂ and allotype ♀.

"*Prionia*" *haematopis* Warr., (*Nov. Zool.*, v, p. 255), founded on a single ♀ from Buru, belongs to the same assemblance, and *perfulvata* may well prove a race of it, but differs in the blackish patagia, tegulae, antenna and costal spots.

EXPLANATION OF PLATE XXIII.

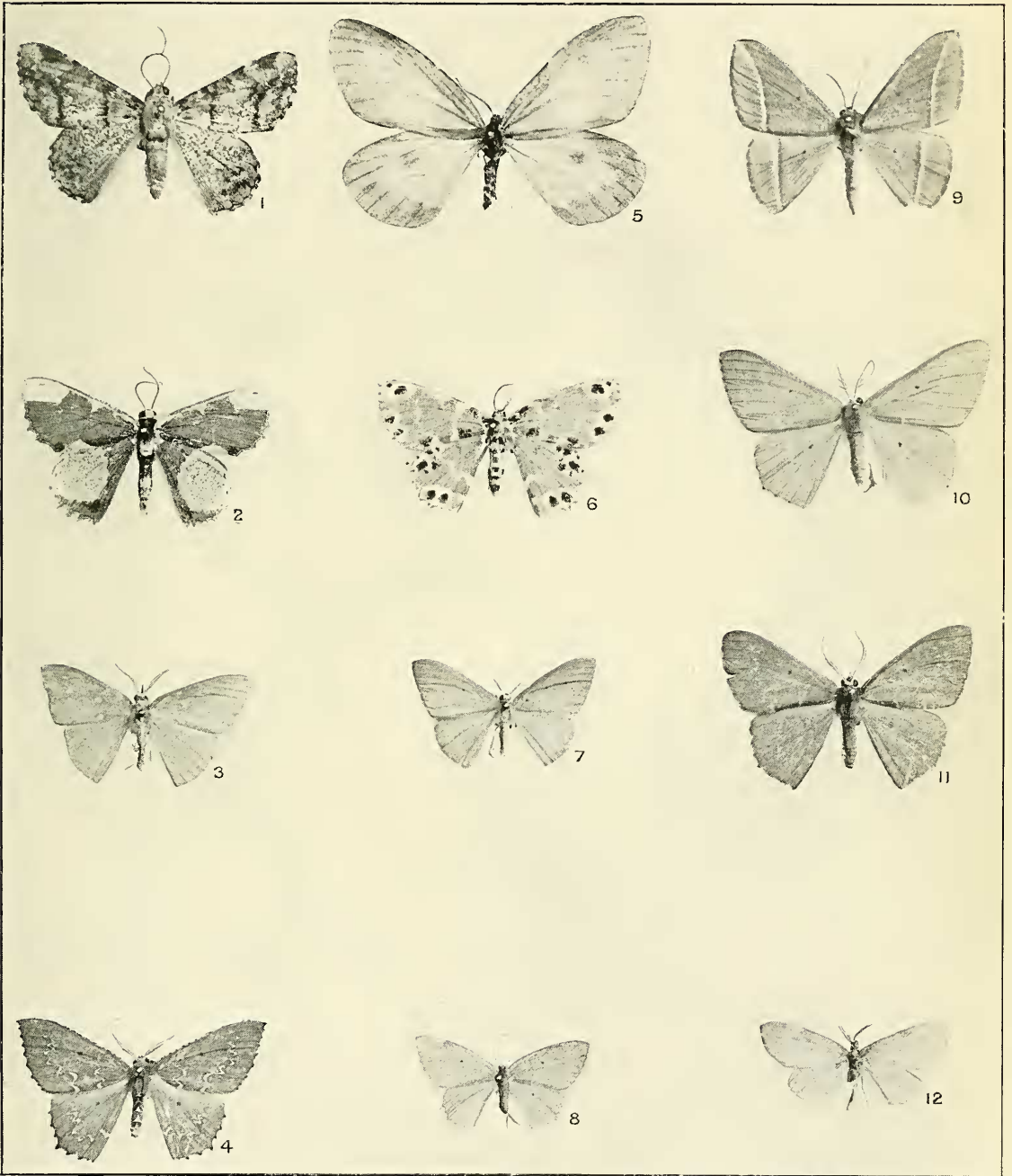
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NEW GEOMETRIDAE FROM DUTCH NEW GUINEA AND MEFOR ISLAND.

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NEW GEOMETRIDAE FROM DUTCH NEW GUINEA AND MEFOR ISLAND.